

GLAST LAT Project Weekly Report for the week ending Aug 23, 2001

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*** CALORIMETER (Carosso)

4. 1. 5. 1 CAL Management

- Preparation for CAL Interim Program Review
 - Supported funding discussions
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4. 1. 5. 3 Performance Assurance

- Attended meetings to discuss parts issues for CAL & ACD.
 - PIN Photodiode flight specification distributed.
 - Trail runs of WOA database is in process.
 - Discussed Fiber Optic connector issues with ACD engineers.
 - SSD specification is being revised and shall be e-mailed by 8/27/01.
 - Had a meeting with GSFC for screening of ADC&DAC PEM parts.
 - Databases were e-mailed for EEE parts and materials to ACD, TKR, and CAL engineers. Inputs are required ASAP please.
 - Scheduled a meeting with GSFC to discuss ASIC qualification, reliability, manufacturing, screening details on 8/27/01
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4. 1. 5. 5 Crystal Detector Elements

Continued PIN bonding tests, thermal cycling of optical adhesives. (NRL)

4. 1. 5. 5. 3 PIN Photodiode

Prepared testing of engineering model PIN diodes

4. 1. 5. 6 CAL Pre Electronics Module

Continued work on PEM test bench software and electronics (NRL)

4. 1. E. 3 CAL Balloon Flight

Reviewed solar and geomagnetic conditions assumed in BF CR simulation. Bottom line: no obvious reason why CR flux should be any greater than used in sim. The solar modulation parameter assumed in sim is close to correct, the geomagnetosphere was fairly Quiet, and there were no significant SEP events during the flight. See <http://gamma.nrl.navy.mil/gl原因ast/CalSW/Aug01/CRsim.htm>

Completed analysis of pre-flight electronic calibration to establish FEE transfer fcn. Will begin coding for BF CalRecon. (NRL)

Continuing analysis of pre-flight muon data to establish pre-launch gains. (NRL)

Continuing basic checkout of balloon flight data. A charge histogram of H and He we can use for in-flight calibration can be found at

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<http://gamma.nrl.navy.mil/glast/CalSW/Aug01/zlay0.pdf>. (NRL)

The calibration process for the BFEM CAL is a long and complicated process. See description at <http://www-glast.stanford.edu/protected/mail/balloon/0238.html> >

4. 1. 5. 4. 5 CAL Software/Design Verification

Released draft of digitization algorithm (CalDigiAlg) design requirements document. Work will continue on requirements docs. (NRL)

Weekly status report for CAL s/w group (for 23 Aug 01) can be found at <http://gamma.nrl.navy.mil/glast/CalSW/Aug01/status23.htm>

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*** ANTICOINCIDENCE DETECTOR (Larsen)

With the BFEM sitting at Goddard waiting for some final testing before disassembly, attention of the balloon team has turned to data analysis. The success of the balloon instrument in taking data at a reasonable rate now has to be matched with interpreting what was seen. Very preliminary results suggest that the simulation (which is not complete) underestimated the trigger rate and underestimated the fraction of events that produced no signal in the ACD. Whether this is related to the performance of the instrument, the fact that it was in the atmosphere, or the limitations of the modeling (or some combination of these), it will be important to sort through the data to see what the triggers actually were. These results will be important to ongoing modeling work for the flight unit, as well as the design of the LAT.

The analysis efforts are starting with the subsystem analysis: the tracker hot/dead strips have been identified; the ACD and XGT pedestals and thresholds have been determined; and work has started on the calorimeter calibration. Until all these subsystem checks are complete, all results should be considered preliminary (for example, the Pisa event display is using an older set of CAL values that can produce misleading pictures). Some scanning of event topologies using tracker and ACD information is continuing. Weekly VRVS meetings are planned for the purpose of sharing results and ideas about the balloon data analysis.

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*** BALLOON FLIGHT (Thompson)

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*** INSTRUMENT OPERATIONS CENTER (Williams)

No input received.

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*** SCIENCE ANALYSIS SOFTWARE (Dubois)

PDR support

Our 50M event run is just about done - only 5 of the original 500 jobs have yet to complete. Still on our plate is to finish off the tools for studying failure modes in the ACD and then we're pretty close to having everything in place to complete the LAT performance studies. Phew! We have also finally caught up enough to restore the linux support - the code is once again building and running on linux straight out of the box.

SAS PDR

Last week we had the SAS PDR (that is the succinct summary for last week's missing progress report). Ours was the last afternoon of 4 days of reviews and the audience was dragging. We have 3 RFAs to deal with so far. Marty Breidenbach and Terry Schalk, both with extensive Lehman review experience, have agreed to help further with our PDR prep.

Balloon Support

Support for balloon analysis continues. The RootAnalysis package has been extended to setup ROOT users' environment. The collection of macros and libraries are now made available as a tarball for easy download. ROOTWriter has been modified to include ACD CNO threshold bits and the upper 16 bits from the live time counters. A new version of bfemApp has been released including a version of userAlg that allows users to insert their own analysis code.

Partly in support of the balloon analysis, we are initiating a GLAST Root Users Group, to enhance the Root experience (and share expertise, air gripes, etc). First meeting is on vrvs Monday 08:30 Pacific time.

Management

After the round of budget cuts, SAS has taken a hit - delay hiring 2 FTEs in FY02. These FTEs were to go into user and code/package support, and starting the Data Processing Facility. We will need to update the budget and schedule to reflect this sad loss. We have fresh input from NRL & France on their activities and will get that into PMCS as well. The work packages got defined last week. Plus continued cleanup (logic, dangling participles - the import from MS Project was not very clean and engendered a lot of cleanup on its own, etc).

With the delay of the PDR until Jan '02, we have to rethink our software week schedule. We also want to start coordination with the nascent SSC on Science Tools

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development. After a brief poll, we are looking at the week of Oct 22-26. What we
would focus on during the week is TBD, but we have no lack of candidates.

Our two UVic CoOp students, Ian Gable and Dan Flath, end their stay with us this
week. Due to visa issues with the program, we are studentless for at least the next
4 months as we try to revive the program.

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*** PERFORMANCE AND SAFETY ASSURANCE (Marsh)

A revised Performance & Safety Assurance cost estimate has been submitted to the
Project Controls Group. The cost estimate incorporates the EEE Parts Engineering
cost estimate and the scope changes recently discussed in the LAT budget meetings.

Responses to the observations identified in the GSFC Safety and Mission Assurance
(S&MA) Survey performed on April 3-4, 2001, have been transmitted to the GSFC GLAST
Project Office. In addition, the final survey report and the observation responses
have been distributed to LAT survey participant's and Subsystem Manager's for their
information.

GLAST LAT Mission Assurance Requirements (MAR/PAIP) and Deliverables (CDRL DID's)
have been discussed with LAT I&T personnel. Top level mission assurance
requirements documentation has also been provided.

Efforts by GSFC are still in progress to secure SAC support for SLAC performance
assurance activities. Due to the delay of acquiring SAC services, GSFC Code 300
management has entered into discussions with Ames Research Center regarding the
possibility of providing support to SLAC.

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*** EDUCATION AND PUBLIC OUTREACH (Cominsky)

No input received.

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